MICROSCIENCE 2008 SYMPOSIA PROGRAMME – at a glance

		Symposium M **Characterisation and nanofabrication of advanced materials** Lecture Theatre 1/M	**Symposium F** **Microscopy and analysis at the frontiers** Lecture Theatre 3/F	**Symposium C** **The cell in time and space** Lecture Theatre 2/C
Tues 24 June		0900 – 0945 Plenary Lecture: Sir David King *The Twenty first century challenges of sustainability and wellbeing* Lecture Theatre 1/M		
	am	**M1.1 *In situ* TEM and Nanotechnology** 1015 *Baumeister *Mapping molecular landscapes inside cells by cryoelectron tomography* 1045 *Howie *Bridging the gaps with in-situ microscopy* 1115 Gai *The 1 Å double aberration corrected in-situ project at York* 1130 *Furuya *In-situ Electron Beam Induced Deposition for the Fabrication of Noble Nanostructures* 1200 Brazier *On the way to the in-situ observation of an all solid state nanobattery cycling in a TEM* 1215 Crozier *In Situ measurement of the Redox activity of individual ceria zirconia nanoparticles* 1230 END	**F1.1 Principles of 21st century SEM** 1015 *Joy *What's new in instrumentation?* 1045 *Thiel *Low vacuum SEM* 1115 Break 1130 Waller *Consideration of imaging gases in cryo-VPSEM and how they can affect a sample* 1145 Zankel *Ultramicrotomy in the ESEM, a versatile method for the 3D reconstruction of specimens* 1200 Lich *Advances in Serial block face DualBeam electron microscopy for the exploration of cortical circuits* 1215 Holst *Imaging with Neutral Helium Atoms - a new microscopy technique* 1230 END	**C1.1 Object tracking in Cell Biology** 1015 *Miura *Studies of the Movement of Vesicles, Viruses and Cells* 1045 Stephens *Object tracking in membrane traffic - biodirectional motility of ER exit sites determined using 2D Gaussian fitting* 1100 *Mashanov *Tracking single molecules at plasma cell membrane* 1130 Sparkes *Tracking and quantifying the affects of myosin mutants on plant organelle dynamics* 1145 *Merrifield *Joining the dots: The use of multiparticle tracking to analyse clathrin mediated endocytosis at the cell surface* 1215 Spiller *Improving the speed and efficiency of live cell timelapse confocal imaging and analysis* 1230 END
	pm	**M1.2 Nano-FIB – Advances in Focused Ion Beam Microscopy** 1430 *Clifton *Realising the Potential of the Local Electrode Atom Probe (LEAP): Combining FIB-SEM and LEAP microscopies* 1500 Zhou *Self-organized ripples on Ti surface irradiated with FIB* 1515 Shearing *Solid oxide fuel cell electrode characterisation and reconstruction using FIB slice and view techniques* 1530 *Warburton *Focussed Ion-Beam Deposition for Nanoelectronic Device Fabrication* 1600 Chen *Nano-pillars and -pores fabricated by ion beam induced deposition* 1615 Pugh *Design and fabrication of a mid infra-red photonic crystal defect laser in Indium Antimonide* 1630 Ross *Nano-scale high performances surface coatings: unlocking the characteristics of heterogenerous structures using focused ion beam microscopy* 1645 END	**F1.2 Image analysis and data warehousing** 1430 *Pepperkok *High Content Screening Microscopy for Systems Biology* 1500 Adya *Atomic Force Microscopy in the 21st Century* 1525 Rosenthal *Image analysis of biological structure on different length scales* 1550 Seiffert *Systematic evaluation of FRAP experiments performed on a confocal laser scanning microscope* 1615 *Swedlow *The Open Microscopy Environment: Informatics and Quantitative Analysis for Biological Microscopy* 1645 END	**C1.2 Advanced Optical Tools in Bio-Diagnostics** 1430 *Matousek *Deep Raman Spectroscopy of Biological Tissue and Powders* 1500 *Ng *Optical proteomics* and predictive imaging in disease* 1530 Morgan *Nanosecond imaging with a true-colour gated CCD detector:- a new approach to multiplexed detection for biological imaging* 1545 Battaglia *Nanoparticles mediated cytosolic delivery for live cell imaging applications* 1600 *Fort *Plasmonics in bio-sensing and bio-imaging* 1630 Cade *Plasmonic nanoparticle arrays for enhanced fluorescence imaging and Raman spectroscopy* 1645 END

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Weds 25 June	am	0900 – 0945 Plenary Lecture: Professor Knut Urban *Aberration-corrected electron microscopy* — Lecture Theatre 1/M		
		M2.1 Nano-FAB – Nanopatterning and Nanofabrication 1015 *Banhart *Creating Nanostructures by Electron Irradiation* 1045 Zhang *Batch fabrication of cantilever array apertured probes for scanning near-field microscopy* 1100 Forbes *The optics of ion picoprobers: on the fundamental limitations of the helium scanning ion microscope and of gas field ionization sources* 1115 *Crozier *High Resolution Electron Beam Induced Processing of Materials* 1145 Saghi *Tomographic Nanofabrication* 1200 Gnanavel *E-beam nanofabrication of ultra sharp Ni SPM tips and nanowires* 1215 END	**F2.1 Developments in aberration-corrected electron microscopy** 1015 *Kisielowski *The TEAM0.5 microscope: Single atom detection across the Periodic Table of Elements* 1100 Haigh *New considerations for exit wavefunction restoration under aberration corrected conditions* 1115 Young *Three-dimensional atomic-scale structure of size-selected gold nanoclusters* 1130 Gass *Aberration corrected STEM: a user facility* 1145 *Lupini *Applications of Aberration-Corrected STEM* 1230 END	**C2.1 Imaging little and large: Macromolecules to whole organisms (I)** 1015 *Zuber *CEMOVIS: cryo-electron microscopy of vitreous sections* 1045 *Patterson *Imaging the distribution and dynamics of molecules in cells using PhotoActivated Localization Microscopy (PALM)* 1115 Rappoport *AP-2 dependent trafficking of activated epidermal growth factor receptor through pre-formed clathrin spots* 1130 *Shorte *A system for high-content super-resolution imaging and visual screening of individual intact living cells in suspension* 1200 Verkade *Moving EM: The Rapid Transfer System as a New Tool for Correlative Light and Electron Microscopy* 1230 END
	pm	**M2.2 Tomography** 1430 *Kübel *Electron Tomography of Nanostructured Composite Materials* 1500 Aronova *Quantitative 2D and 3D EFTEM mapping of chemical elements in biological systems* 1515 Hernandez *Electron tomography of nanostructures: crystallographic and metrological 3D studies* 1530 *Poulson *3DXRD microscopy: grain maps and grain dynamics in 3D* 1600 Mummery *The use of X-ray tomography in biomechanics* 1615 Egbert *X-ray nanoCT: visualisation of internal 3D structures with submicrometer resolution* 1630 Krstajic *Optical coherence tomography of ex vivo skin* 1645 END	**F2.2 New innovations in Light Microscopy (I))** 1430 *Bastiaens *Quantification of biochemical reactions in cells using optical approaches* 1500 Kammerloher *A novel luminescence microscopy system for detection of gene expression and Ca^{2+} imaging* 1525 Wicker *Interferometric resolution and efficiency enhancement for scanning fluorescence microscopes* 1545 Steinmetz *STED microscopy - breaking the optical defraction barrier* 1610 Harris *Simultaneous "Real-Time" temperature assisted optical tweezing and confocal imaging of T-cells using a low numerical aperture lens* 1630 END	**C2.2 Imaging little and large: Macromolecules to whole organisms (II)** 1430 *Kioussis *The role of RET Tyrosine Kinase in the development of lymphoid organs* 1500 Harper *Imaging of gene expression: from single cells to whole organs* 1515 *Mamalaki *Fluorescence molecular tomography* 1545 Green *The role of anaglyph imaging and its application in palaeobiology - a case study using the worlds oldest putative fossil* 1600 Osterrieder *Golgi deconstruction and reconstruction in living cells* 1615 Russell *Mechanisms used to generate brain asymmetry and laterality in zebrafish* 1630 END
		1800 – 1845 RMS Lecture: Professor Sir Harry Kroto *Mechanisms of Self Assembly at Nanoscale Dimensions* — Lecture theatre 1/M		
		1845 Party on the Plaza – the Fox@ExCeL – free to all delegates		

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Thurs 26 June	am	0900 – 0945 Plenary Lecture: Professor Stefan Hell *Breaking Abbe's barrier:Diffraction-unlimited resolution in far-field optical microscopy* Lecture Theatre 1/M		
		M3.1 Electron Spectroscopy 1015 *Hofer *Electron Energy-Loss Spectroscopy with a Monochromated TEM* 1045 Crozier *Determination of aerosol optical properties from EELS* 1100 Bleloch *Atomic column resolved EELS* 1115 McComb *Investigation of organic/inorganic interfaces using electron energy-loss spectroscopy* 1130 Zhou *(S)TEM/EELS characterisation of a multilayer C/Cr PVD coating* 1145 *Stephan *Mapping the optical properties at the nanometer scale with a focused beam of fast electrons* 1215 END	**F3.1 New innovations in Light Microscopy (II)** 1015 *Wilson *Making Light Work in Microscopy* 1045 Hessling *New innovations in Multiphoton microscopy* 1110 Maiden *A new form of high-resolution diffractive microscopy with large working distances* 1130 Hubbard *New Developments in Laser Microscopy for Live Cell Imaging* 1155 Tuohy *Adaptive Optics Enface OCT Microsope* 1215 END	**C3.1 Nanoscopy: pushing the limits** 1015 *Cremer *Laseroptical Nanoscopy using Spatially Modulated Illumination(SMI) and Spectrally Assigned Localization Microscopy (SALM)* 1045 *van Capellen *4Pi microscopy in practice* 1115 Soeller *Quantification of sub-resolution biological structures by confocal fluorescence microscopy* 1130 *Schultz *From multiparameter imaging to correlative microscopy and back* 1200 *Gadella *FRET-Imaging of G-protein activation and downstream induced signalling* 1230 END
	pm	**M3.2 Applications of 21st Century SEM** 1430 *Stokes *Advances and applications of SEM – where are we, where are we going?* 1445 Inagi *Low voltage, high resolution SEM imaging of mesoporous silica SBA-15* 1500 Klein *The large chamber SEM: a new tool for non-destructive testing* 1515 Graham *High-resolution SEM of cometary material returned to earth by NASAs Stardust spacecraft* 1530 Falke *Texture analysis of thin films: from the micrometer to the Angstrom scale* 1545 Long *The complementary analysis of surfaces by EDX and SIMS* 1600 *Joy *Imaging and microanalysis with helium ion beams* 1630 Bell *Advanced contrast modes for nanoscale imaging using secondary electrons and backscattered helium ions in the Orion Helium Ion Microscope* 1645 END	**F.3.2 Microscopy with the brightest light – synchrotron radiation techniques** 1430 *Salditt *Lense-less x-ray imaging based on holographic object reconstruction* 1505 Asensio *Exploring advanced materials at the nano-scale using ANTARES, the scanning photoemission imaging beamline at SOLEIL* 1525 Rau *Nano-imaging of opaque structures with synchrotron light: the DIAMOND beamline I13L for coherence and imaging* 1545 Bohic *Synchrotron based spectro-microscopy for cell biology* 1605 Humphrey *Supported Pd nanoparticle studies using scanning tunneling microscopy and photoemission electron microscopy* 1625 Berenguer *Coherent X-ray diffraction measurements of Rat-tail Collagen for Ptychographic Imaging* 1645 END	**C.3.2 New Innovations in Light Microscopy – Cell Special** 1430 *Leake *Developing multi-dimensional optical microscopy to probe the living cell* 1500 Model *Concentrated dyes: media of many uses for light microscopy* 1515 Wiesshart *Raster-Scan Imaging Correlation Spectroscopy (RICS)* 1535 Dolman *Bringing cell proliferation assays back into vogue; Improvements beyond BrdU* 1555 Oosterveld-Hut *Frequency domain FLIM combined to TIRF, Multibeam Confocal, or Spectrograph* 1610 *Briddon *Quantifying binding to GPCRs at a subcellular level: novel small molecule fluorescent ligands for fluorescence correlation spectroscopy* 1640 END

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